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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/070,260	03/01/2002	Tomotaka Koketsu	1055-02	2943
35811	7590	11/12/2003		
IP DEPARTMENT OF PIPER RUDNICK LLP 3400 TWO LOGAN SQUARE 18TH AND ARCH STREETS PHILADELPHIA, PA 19103			EXAMINER BEFUMO, JENNA LEIGH	
			ART UNIT 1771	PAPER NUMBER

DATE MAILED: 11/12/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/070,260

Applicant(s)

KOKETSU ET AL.

Examiner

Jenna-Leigh Befumo

Art Unit

1771

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on _____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3 and 7-9 is/are rejected.
- 7) ☐ Claim(s) 4-6 and 10 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 March 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference signs mentioned in the description: reference sign e, described on page 18, is not in Figure 3. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.
2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference signs not mentioned in the description: reference sign 0, in Figure 3a. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference signs in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Specification

3. The disclosure is objected to because of the following informalities: The specification is objected to since the Applicant did not include a section containing a Brief Description of the drawings as set forth in MPEP § 608.01 (f).

Appropriate correction is required.

Claim Objections

4. Claims 4, 5, 6, and 10 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend on another multiple dependent claims. Further, claim 10 is also objected to since it must refer to other claims in the alternative only. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

5. Claim 1 is objected to because of the following informalities: the phrase “a monofilament fineness of at most 10 dtex”. Should it be “at most” instead of “at moat”? Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1 – 3 and 7 – 9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
8. Claims 1 – 3 are indefinite because they fail to set forth the structure of the fabric and only claim properties of the cover factor and air permeability produced by the fabric. Claims that merely set forth physical characteristics desired in an article, and not setting forth specific compositions which would meet such characteristics are invalid as vague, indefinite, and functional since they cover any conceivable combination of ingredients either presently existing or which might be discovered in the future. *Ex parte Slob* (PO BdApp) 157 USPQ 172.

The Applicant has failed to set forth any structural limitations to the claimed fabric, except for the recitation that the fabric is made yarns containing fibers with a flattened cross-section. While it is agreed that the yarn properties would manipulatively effect the claimed properties, it is the weave structure itself which would have the most influence on the claimed properties. Therefore, without reciting the weave structure limitations that produce the claim properties, the claim is indefinite since the Applicant has failed to distinctly claim the

Applicant's invention. What weave pattern and weave density is required to produce the required properties?

9. Claim 1 recites the limitation "the warp" in line 2. There is insufficient antecedent basis for this limitation in the claim.
10. Claim 1 recites the limitation "the weft" in line 2. There is insufficient antecedent basis for this limitation in the claim.
11. The term "fibers" in claim 7 is indefinite. In the preamble, the Applicant is claiming fibers made from multifilaments. Since the term fiber refers to an individual filament, it is unclear how fibers can be made from multifilaments, or any group of filaments. Is the Applicant actually claiming a yarn instead of an individual fiber? For purposes of examination, the term fibers is being interpreted as yarns. Claims 8 and 9 are rejected due to their dependency on claim 7.
12. The term "residual entanglements" in claim 8 is indefinite. What are the "residual entanglements" and how are they produced? Are the "entanglements" due to tack points formed in the yarn, the twist level in the yarn, or something else? Further, why is it that the stretched yarn would have more "residual entanglements" than an unstretched yarn? Since it is unclear what the Applicant is claiming, and how it is being measured, claim 8 is not further examined on the merits. Claim 9 is rejected due to its dependence on claim 8.

Claim Rejections - 35 USC § 103

13. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. Claims 1 – 3 are rejected under 35 U.S.C. 103(a) as obvious over Fastenau et al. (6,037,047).

Fastenau et al. discloses industrial fibers with a linear density of 4 – 8 denier, or 4.4 – 8.9 dtex, and an elongated diamond shape cross section with an aspect ratio of between 2 and 6 (abstract). Further, 140 – 192 of the industrial fibers can be group together to form yarns having a total linear density of between 616 to 1700 dtex (column 5, lines 11 – 13). As shown in Figure 4, when the filaments are joined together to form yarns, most of the individual filaments have their major axis parallel to the horizontal direction of the yarn. Thus, the filaments would have a horizontal index (HI) of approximately 1, since the cosine (0°) is 1. Fastenau et al. discloses that these yarns can be woven into fabrics made with any conventional design (column 6, lines 2 – 5). These woven fabrics can be used as airbag fabrics (column 8, lines 4 – 5).

While Fastenau et al. fails to teach the cover factor produced in the woven fabrics, Fastenau et al. teaches that the woven fabric is produced using conventional designs and the fabric is used as an airbag, as well as the fact that fabrics produced from the shaped fibers have improved covering power (column 6, lines 7 – 10). Further, it is well known in the airbag art that the permeability of the fabric must be controlled so that the airbag will expand at the desired rate. Therefore, it would have been obvious to one of ordinary skill in the art to choose a known weave pattern used in airbag fabrics and optimize the fabric's cover factor to control the air permeability of the fabric.

Although Fastenau et al. does not explicitly teach the limitations air permeability, it is reasonable to presume that said limitations are inherent to the invention. Support for said

presumption is found in the use of similar materials (i.e. fiber shape and size, yarn structure) and in the similar production steps (i.e. weaving the yarns together) used to produce the airbag fabric. The burden is upon the Applicant to prove otherwise. *In re Fitzgerald*, 205 USPQ 594. In the alternative, it would have been obvious for one having ordinary skill in the art to optimize the air permeability to control the rate at which the airbag would expand during use. Therefore, claims 1 – 3 are rejected.

15. Claims 1 – 3, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 07-252740 A.

JP 07-252740 A discloses an airbag fabric made by weaving together yarns made from synthetic filaments having a cross-sectional flatness of 1.5 to 6.0 (abstract). The individual filaments have a linear density of 0.1 to 7.0 denier, or 0.11 to 7.8 dtex (abstract). And the yarn has a total denier of between 180 and 450, or 200 to 500 dtex (abstract).

JP 07-252740 fails to teach the cover factor of the airbag fabric. However, it would have been obvious to one of ordinary skill in the art to one of ordinary skill in the art to optimize the cover factor of the fabric to control the air permeability and as a result control the rate at which the airbag will expand during use.

Further, while JP 07-252740 discloses an air permeability level different from that recited by the Applicant, it is unclear if the fabric taught by JP 07-252740 was tested under the same testing conditions as the Applicant's fabrics. However, the limitations of air permeability are a direct result of the fabric construction. And in this case, JP 07-252740 teaches that the fabric is made from similarly shaped fibers and the woven fabric is used as an airbag. Hence, it is reasonable to presume that the limitations of air permeability are inherent to the fabric taught by JP 07-252740 since air permeability is a direct result of the fabric construction. In the

alternative, it would have been obvious to one of ordinary skill in the art to optimize the air permeability of the airbag fabric to control the rate at which the airbag expands during use.

Thus, claims 1 – 3 are rejected.

With respect to the yarn and fiber limitations in claim 7, JP 07-252740 shows various shaped fibers in the figures that have uneven surfaces. The fibers as drawn would inherently have the claimed surface smoothness limitations since JP 07-252740 teaches an almost identical shaped fiber as the Applicant. In the alternative, it would have been obvious to one of ordinary skill in the art to choose the claimed surface smoothness, so that the fibers would have some degree of friction on the surface of the fibers, helping the fibers to hold together when combined to form yarns, without making the surface too rough so that the fibers would lock together or knot together.

Finally, it would have been obvious to one of ordinary skill in the art to choose the claimed largest minor axis length, since the fibers taught by JP 07-252740 have a similar aspect ratio, or largest minor axis to major axis ratio, and a similar denier size, or mass per unit length. Therefore, these structural requirements for the fiber would limit the length of the largest minor axis that could be used to make the filaments. Therefore, claim 7 is rejected.

16. Claims 7 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aneja (5,626,961).

Aneja discloses a fiber with scalloped-oval cross section which can be used to produce fabrics (abstract). The fibers have an aspect ratio of 1.1 to 3 (column 2, lines 36 – 38). The fibers produced can have a denier of 3, or 3.3 dtex (column 4, line 6). Additionally, Aneja teaches the fibers can be made from polyamides (column 3, line 4). Finally, Aneja discloses that different minor axis length, shown in Figure 2, have set ratios; d_1/d_2 is about 0.5 to about 1 and

b_1/b_2 is about 0.25 to about 0.9 (column 2, lines 58 – 62). That means the ratio of the smallest minor axis to the largest minor axis, or d_1/b_2 is about 0.125 to about 0.9.

Aneja fails to disclose that actual length of largest minor axis. However, since the length of the largest minor axis is directly related to the aspect ratio and the fineness or denier of the yarn, it would have been obvious to one of ordinary skill in the art to choose a length of less than $15\mu\text{m}$ so that the fiber has a fineness of 3 denier and an aspect ratio of 3 as taught by Aneja. Thus, claims 7 and 9 are rejected.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jenna-Leigh Befumo whose telephone number is (703) 605-1170. The examiner can normally be reached on Monday - Friday (8:00 - 5:30). Approximately December 31st, the examiner's telephone number will change to (571) 272-1472.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Terrel Morris can be reached on (703) 308-2414. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Jenna-Leigh Befumo
October 29, 2003



CHERYL A. JUSKA
PRIMARY EXAMINER